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THE REVOLUTION IN MILITARY AFFAIRS:
Possible Implications for Canada

BY

DR SCOT ROBERTSON

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Possible Implications in Canada

by

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ABSTRACT

This Research Note was developed following a presentation on the Revolution in Military Affairs (RMA) and its possible implications for Canada. It is part of a much larger undertaking and ongoing initiative within the Directorate of Defence Analysis to examine the RMA.

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THE REVOLUTION IN MILITARY AFFAIRS:
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INTRODUCTION

1. The eminent British military historian, Sir Michael Howard, once observed that he was:

> tempted to declare dogmatically that whatever doctrine the Armed Forces are working on now, they have got it wrong. I am also tempted to declare that it does not matter that they have got it wrong. What does matter is their capacity to get it right quickly when the moment arrives.

Howard's assertion, while somewhat foreboding and more than a little depressing, is also largely correct. Military history is replete with examples of armed forces getting it wrong at the outset. In some cases they were able to adjust, adapt, and in the end get it right. Yet, there are also examples, albeit fewer, of armed forces "getting it right" from the outset. In essence, the debate over the Revolution in Military Affairs (RMA) really boils down to the question of whether the proponents have "got it right" or not. While there is no way of making this judgement, except with the passage of time, it is important to consider the dimensions of the debate. One cannot expect to understand and shape events that are driving some proponents to argue that we stand on the threshold of an RMA, unless there is a fundamental understanding of the essence of that debate.

DEBATE

2. As with most debates positions have tended to harden and become polarized. The debate over the RMA is no exception, and could be characterized as one between Zealots and Skeptics. In some respects, it has become almost a dialogue of the deaf, in which either side shouts louder, and louder, and is given to rhetorical flights of fancy in order to make a point. The Zealots contend that the rapid advance of technology has already, or will soon, forever alter the nature of war. The Skeptics counter by saying this is a dangerous fallacy, and point to numerous historical examples where similar claims proved false, or at least premature.

CONTEXT

3. The extent to which the public debate is characterized in such a way, is a disappointing, if somewhat understandable phenomenon. Rather than falling into this trap, the intent of this note is to try to provide some context for the entire issue, particularly with respect to the impact that the RMA will have on the need for considering future officer professional development.

AN OVERVIEW OF THE RMA

4. There is historical precedent for a major shift in the tide of military affairs. Over the past 500 years or so, there have been more than a dozen instances that could be characterized as ***revolutionary***. Revolutionary, in this context, should be taken to mean an event or series of events, that fundamentally alters if not the nature of war, then at the very least the face of war. This table shows what one commentator holds as the military revolutions of the last half-millenium.

TABLE I

EXAMPLES OF POSSIBLE RMAS

CENTURY	POSSIBLE RMA	DRIVING FORCES AND / OR CONTEXT
14th	Longbow	Cultural
15th	Gunpowder	Technological; Financial
16th	Fortifications	Architectural; Financial
17th	Dutch-Swedish tactical reforms	Tactical; Organisational; Cultural
	French military reforms	Tactical; Financial; Conceptual
17th&18th	Naval warfare	Administrative; Social; Financial; Technological
18th	British financial revolution	Financial; Organisational; Conceptual
	French Revolution	Ideological; Social
18th &19th	Industrial Revolution	Financial; Technological; Organisational; Cultural
19th	American Civil War	Ideological; Technological; Administrative; Operational
Late 19th	Naval War	Technological; Administrative; Cultural
19th & 20th	Medical	Technological; Organisational
20th	World War I	Tactical; Conceptual; Technological; Scientific
	Blitzkrieg	Tactical; Operational; Conceptual; Organisational
	Carrier Warfare	Conceptual; Technological; Organisational
	Strategic air war	Technological; Conceptual; Tactical; Scientific
	Submarine	Technological; Scientific; Tactical
	Amphibious war	Conceptual; Tactical; Operational
	Nuclear weapons	Technological
	People's war	Ideological; Political; Conceptual

5. The historical record suggestions that military revolutions are indeed possible. Some were relatively sudden, while others were of an evolutionary nature. In most cases, the impetus came from a combination of factors. Of greatest significance are:

- concepts
- doctrine
- technology
- organization
- cultural
- ideological
- social
- financial

FOCUS

6. In light of the preceding discussion, what should we make of the current situation? Is there a Revolution in Military Affairs? If so, what is its fundamental nature? What will it mean for armed forces in the future? As a first step in beginning to address these questions, it is important to adopt a common definition of what is meant by the term Revolution in Military Affairs. Much of the inconclusive shouting could be addressed by pausing to give thought to just what the proponents of an RMA are asserting. To date, the most commonly held definition of an RMA has been devised by Dr Andrew Marshall in the Office of Net Assessment, US DoD. According to this definition, an RMA is

> A major change in the nature of warfare brought about by the innovative application of **new technologies** which, combined with dramatic changes in **military doctrine** and **operational** and **organisational concepts** fundamentally alters the character and conduct of military operations.

What is important to note in this definition is the inter-relationship between four key components, namely technology, doctrine, operational concepts and organizational concepts. A Revolution in Military Affairs can only be said to occur when each of these component parts is fused to produce a new model for the conduct of military operations.

7. To illustrate this point by means of historical analogy, one need only look to the development of *Blitzkrieg*. At the end of the First World War, there existed precursors of what would later be known as Blitzkrieg. Each of the major combatants emerged from the First World War with the same basic experience, with the same basic technologies, and with largely similar organisational and doctrinal approaches. However, following the war, it was Germany that was perhaps most successful in building upon these lessons. Rather than simply grafting on the lessons and technologies to the existing force model, the Germans undertook a radical re-think. What emerged was Blitzkrieg.

8. In contrast, other combatants did not adapt nearly so readily. For the most part, new technology was merely grafted on to existing organisations in a piece-meal fashion. Doctrinal precepts did not evolve markedly. As such, there was an incremental increase in combat power, and an incremental change in approach, but nothing as revolutionary as that of the German Blitzkrieg.

9. In an ideal world, the current debate and intellectual ferment is reflective of an effort to build upon developments in the areas of concepts, technology, doctrine and organisation in a manner similar to that fostered by General Hans von Seekt in the early years following World War I. As *de facto* Chief of Staff of the German Army from 1919 to 1926 von Seekt embarked upon a thorough and serious study of the "lessons" of the Great War. To do this, he established 57 committees to study the experience. (It should be noted, that of the 4000 officers permitted under the Versailles Treaty, over 500 were engaged in this effort.)

THE CONTEMPORARY RMA

10. To begin with, it is first necessary to attempt to come to grips with what the contemporary RMA entails. Reduced to its simplest, the argument is that trends in technology will allow armed forces in the future to:

- "see" and "understand" the battlespace in all its dimensions;
- strike with greater precision and lethality; and
- apply force from extended ranges.

These technological developments suggest a number of overarching doctrinal and organisational changes. Presently, the US is developing a doctrinal construct based upon the following fundamental precepts:

- Dominant Battlespace Knowledge;
- Near Perfect Mission Assignment; and
- Near Perfect Battle Assessment.

Figure 1 attempts to portray the inter-relationship between these three components, which is similar, in many ways, to the Observe – Orient – Decide –Act (or OODA Loop).

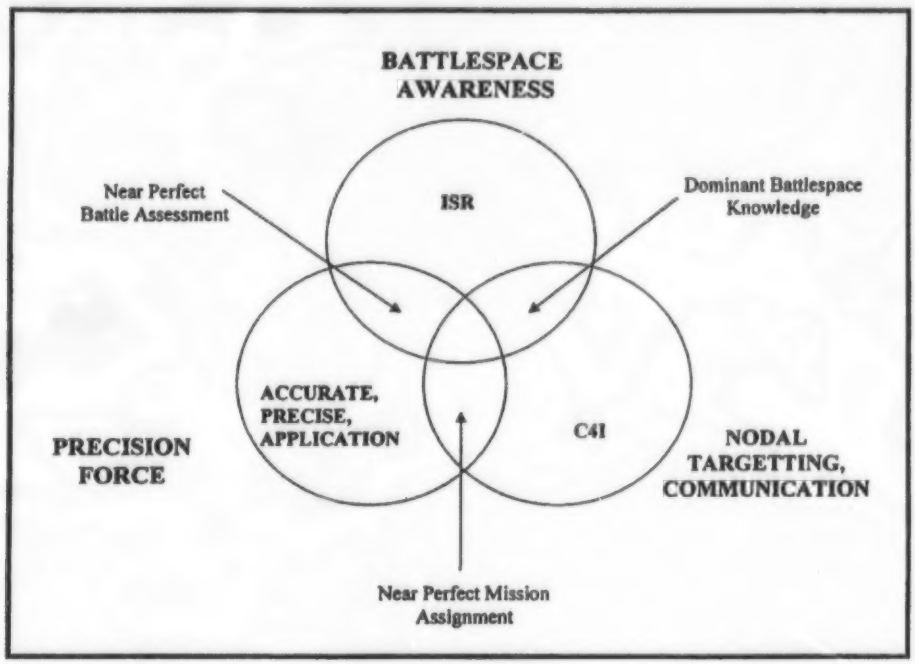

Figure 1: Components of the Contemporary RMA

In viewing this diagram, one should take note of the overlap between the three elements. The point at which the three elements intersect would constitute a Revolution in Military Affairs.

THE DILEMMA

11. It seems that the current debate in the defence community, particularly south of the border, is more or less in keeping with the spirit of inquiry fostered by von Seekt. There is a remarkable degree of thought and experiment being devoted to the question of the future of warfare and what it might imply. Some of it might be self-serving or fanciful or misguided, or all three, but at least the future is being explored.

12. Given that one cannot, by definition, know what the future will hold, the dilemma is to search for a generalized force model that will support national interests in a manner that will be fault-tolerant. That is to say, it should be able to serve a range of possibilities in uncertain circumstances and have some good prospect of success. Whether the model being advocated by the proponents of an RMA will meet that test remains to be seen?

13. What is clear, or at least is coming clear, is that the US defence community is attempting to think about an uncertain future, and to fashion a force model that will serve them. Rather than sitting back, complacent in the knowledge that it remains ***THE*** superpower, they are considering what it will take for them to sustain that stature.

IMPLICATIONS FOR US ALLIES AND POTENTIAL FOES

14. Allies of the United States, as well as potential foes, are aware to a greater or lesser degree, of the US attempt to effect a Revolution in Military Affairs. The question, of course, is what these countries, and others, will be able to do about it, given the perceived cost attached to the RMA.

ALLIES

15. For allies of the United States, the main question concerns continued inter-operability. Given current budgetary circumstances, most US allies will be unable to retain the full panoply of military capabilities. In some respects, this results in a requirement for coalitions to conduct future major military operations. As such, inter-operability becomes a significant challenge. As the US acquires the systems and structures to pursue dominant battle-space knowledge, precise and lethal long range strike, and rapid and accurate battle assessment, allies will find it ever more difficult to operate with the US forces. The extent to which this may, or may not be a problem remains to be seen. However, reduced to its simplest, allies that still find it in their interests to plug into a US-led coalition, will need to be able to operate with those forces.

This does not suggest that those allies will need to acquire all the systems that a US force based on the RMA model will have. It does suggest, however, that C^4I and doctrine will be of particular importance.

POTENTIAL ENEMIES OR FOES

16. For potential foes, the RMA poses an even more substantial challenge. A US RMA based force will be capable of achieving an unprecedented degree of shock and awe. Faced with this, potential foes, unless they too embark on an RMA initiative of their own, would find it very difficult to confront the United States, or a US lead coalition, on an equal footing. As a consequence, potential foes could seek to employ asymmetric means in a conflict. These could involve:

- The threat or actual use of weapons of mass destruction (NBCW);
- Information Operations (attacks on the C^4I of the RMA force);
- Attacks on the infrastructure/will of the "homelands" of the coalition nations (terrorist attack);
- Attacks on the information infrastructure of the homelands such as financial markets, power management system, etc. (hackers/viruses);
- Low-tech and/or guerrilla type tactics.

17. There is no question that these asymmetric counters or strategies exist, and that any potential foe confronting an RMA force would be foolhardy to overlook them. One should assume, that future foes will have learned lessons from Sadam Hussein. They will not be a willing and co-operative enemy and attempt to confront US strengths.

18. However, it would be equally dangerous for us to assume that sometime over the next two decades, a peer competitor to the United States might not emerge. In that sense, prudent planners need to search for the best means to deter, and should deterrence fail, to fight and win a war against a sophisticated opponent.

IMPLICATIONS FOR CANADA

19. Where does this lead, and what are the implications for the Canadian Forces? One of the first challenges is to attempt to develop a coherent picture of the details of the revolution in military affairs. Clearly, the trends in technology portend some significant changes to the conduct of warfare, if not to the nature of war.

20. This is not to suggest that the Canadian Forces will need to embrace it fully and pursue a force model consistent with that being proposed for the US forces, for that could be well-beyond our means. However, it is important that we begin to develop a Canadian perspective. As a first step we need to devote some considerable intellectual effort to understanding the RMA in all its dimensions. This will involve not only the role of emerging technology, but also the impact that it will or could have on doctrine and organisation.

21. Given the potential importance of the Revolution in Military Affairs there would appear to be a number of options. The first would be to ignore it completely, or to deny that there is any substance to it. The consequences of this will be a continued glide-path towards obsolescence, as well as a failure to understand the impact of technology and its implications as a combat multiplier. A second option would be to wait for the United States to sort it out. That too, might be an unpalatable option. Given the lead times necessary for procurement, as well as doctrinal development and organisational change, the CF could find itself unable to operate effectively with allies in support of our own national interests. Yet, as we have acknowledged so many times in our history, co-operation with our allies is a cornerstone of our approach to defence. The third and perhaps most logical option, would be to begin to develop a Canadian perspective. Such a perspective would seek to identify areas that might have the greatest impact upon the CF of the future. Perhaps most significant will be interoperability in terms of C^4I systems and doctrine. Other areas of potential interest would be in the application of precision strike technologies. These could have significant force structure and organisational implications. The effect of precision strike systems could lead to reduced logistical support demands, as well as to changes in the way fire units are structured and employed.

22. What does this all mean for Canada? What should we do? How do we do it? These are very difficult questions, and unfortunately, answers are in short supply. One thing, however, is clear. The Canadian Armed Forces need to foster an intellectual capability to address an uncertain and challenging future. Only then can we meet Sir Michael Howard's injunction to be able to *get it right quickly when the moment arrives.*

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